

## Research Note

# A New Host and Geographic Record for *Myxidium lesminteri* (Protozoa: Myxosporea) from *Tomopterna cryptotis* (Amphibia: Ranidae), in Namibia, South-West Africa

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**ABSTRACT:** A new host and geographic distribution record is reported for the myxosporean, *Myxidium lesminteri* Delvignier, Markus, and Passmore, 1992, from the stripe-burrowing frog, *Tomopterna cryptotis* (Ranidae) in Namibia, South-West Africa. One of 4 (25%) *T. cryptotis* was found to be harboring trophozoites and spores of *M. lesminteri* in the gall bladder. The species was originally described from a congeneric ranid, *Tomopterna krugerensis*, and also from *Bufo garmani* (Bufonidae) and *Heleophryne natalensis* (Heleophrynidae) in South Africa.

**KEY WORDS:** Amphibia, Anura, *Myxidium lesminteri*, Myxosporea, Protozoa, Ranidae, spore, survey, trophozoite.

The gall bladder myxosporean, *Myxidium lesminteri* Delvignier, Markus, and Passmore, 1992, was recently described from 3 species of anurans from South Africa (Delvignier et al., 1992). During a survey of African amphibians for protozoan and helminth parasites, we found a myxosporean matching the description of *M. lesminteri* in a ranid frog from Namibia. Herein, we provide a new host and distributional record for the parasite.

During April 1992, 4 adult striped-burrowing frogs, *Tomopterna cryptotis* Boulenger, 1907, were collected by hand by P.S.F. from 2 sites in Namibia. One site was located in the Keetmanshoop District, 47.2 km S Keetmanshoop at the Löwen River (20°00'S, 18°00'E) and the other was in the Owambo District, 35 km W Oshakati (17°47'S, 16°05'E). Frogs were killed within 24 hr of capture by pithing and whole gall bladders were removed, preserved in 10% formalin, and temporarily stored in individual vials. Gall bladder contents were emptied onto microscopic slides for examination under low magnification. Detailed methods of fixation and staining follow those of McAllister et al. (1995). Specimens were identified based on the morphology of the trophozoite and spore. Cursor measurements of

trophozoites and spores were made with a calibrated ocular micrometer and are reported as means in micrometers ( $\mu\text{m}$ ) followed by the ranges in parentheses.

Voucher specimens of *T. cryptotis* were deposited in the Carnegie Museum of Natural History, Pittsburgh, Pennsylvania (CM). A voucher slide of *M. lesminteri* was deposited in the U.S. National Parasite Collection, Beltsville, Maryland 20705 as USNPC 84491.

One of 4 *T. cryptotis* (adult, 45 mm snout-vent length, CM 130226) from the Oshakati site was infected with a myxozoan matching the description of *M. lesminteri*. Trophozoites were ovoidal and floated freely in bile contents or adhered to gall bladder epithelium and measured 750 (500–1,000)  $\mu\text{m}$  in diameter ( $N = 10$ ). Ovoidal spores were visible in the medullary zone or endoplasm of trophozoites and measured (length  $\times$  width) 12.0 (10.0–14.0)  $\times$  6.5 (5.5–8.0)  $\mu\text{m}$  ( $N = 10$ ). Although there is size variation of trophozoites and spores among anuran hosts with *Myxidium* spp. (Kudo and Sprague, 1940; Kudo, 1943; Clark and Shoemaker, 1973; Clark, 1982; Delvignier, 1986; Delvignier et al., 1992; McAllister and Trauth, 1995; McAllister et al., 1995), our measurements accord well with those previously reported for *M. lesminteri* (see Delvignier et al., 1992). On closer examination, spores were without striations and contained 2 spheroidal polar capsules at each pole, features typical of *M. lesminteri* (Delvignier et al., 1992).

Delvignier et al. (1992) surveyed 409 anurans representing 50 species within 9 families from South Africa and Swaziland for gall bladder myxozoans. The authors found a very low overall prevalence of infection with *M. lesminteri*, as only 3 of 409 (0.7%) frogs harbored the parasite, including 1 of 7 (14%) sand frogs, *Tomopterna krugerensis* Passmore and Carruthers, 1 of 20

(5%) Garman's square-marked toads, *Bufo garmani* Meek, and 1 of 2 (50%) Natal ghost frogs, *Heleophryne natalensis* Hewitt, from the Transvaal region of South Africa. The new geographic locale noted herein for *M. lesminteri* is approximately 1,600 km NW of previous locales for *M. lesminteri* reported by Delvinquier et al. (1992).

In summary, we add a fourth host species for this parasite, as *Myxidium lesminteri* is now reported from a bufonid, a heleophrynid, and 2 ranids from southern Africa. To date, 11 species of *Myxidium* have been reported from Africa. Fantham (1930) reported 3 species of *Myxidium* from South African saltwater fishes and Dubina and Isakov (1976) provided a description of *Myxidium gigantissimum* from a bathial fish collected off the South African coast. In other parts of Africa, Fomena and Bouix (1986) described 5 species of *Myxidium* from freshwater fishes in Cameroon and Okaeme et al. (1988) reported a *Myxidium* sp. in a Nigerian fish. However, to our knowledge, *M. lesminteri* is the first species of *Myxidium* known from Namibia in South-West Africa.

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